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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/997,906	11/30/2001	Chin-Te Huang	67,200-617	4738

7590 01/21/2004
TUNG & ASSOCIATES
Suite 120
838 W. Long Lake Road
Bloomfield Hills, MI 48302

EXAMINER

JACKSON, ANDRE K

ART UNIT	PAPER NUMBER
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2856

DATE MAILED: 01/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/997,906

Applicant(s)

HUANG ET AL.

Examiner

André K. Jackson

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. In view of the Appeal Brief filed on 10/21/03, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

- (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,
- (2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the personal computer, programmable logic controller and embedded processor must be shown or the features canceled from the claims. No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1,3,5-9 and 13-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Takashi et al.

Regarding claim 1, Takahashi et al. disclose in "Liquid leakage detector line" a pair of electrical conductors in relative proximity to the fluid (Abstract Columns 1-2); at least one conductor (Figure 1) characterized by an electrical insulative porous sheath to provide electrical isolation of one electrical conductor from the other conductor (Figure 1); circuitry coupled to the electrical conductors effective to measure a resistance of electrical conductors and an electrical short where the resistance indicates the existence of a leak and the relative location of the leak (Figures 14-18, Column 3).

Regarding claim 3, Takahashi et al. disclose a pair of electrical conductors has a second insulated conductor characterized by an electrically insulated, porous sheath and being parallel in adjacency (Figures 1,2,8,9).

Regarding claim 5, Takahashi et al. disclose a pair of conductors having individually insulated conductors (Figures 1,2,8,9).

Regarding claim 6, Takahashi et al. disclose integrally insulated conductors (Figures 1,2,8,9).

Regarding claim 7, Takahashi et al. disclose circuitry that measures ohms (Figures 2-4,14,18,19).

Regarding claim 8, Takahashi et al. disclose where the circuit has a voltage source and a current sensing circuit (Figures 2-4,18,19).

Regarding claim 9, Takahashi et al. disclose where the circuit has a current source and a voltage sensing circuit (Figures 2-4,18,19).

Regarding claim 13, Takahashi et al. disclose a pair of electrical conductors in relative proximity to the fluid; determining a resistance between at least one conductor and the other conductor; relating the resistance to one of a normal condition corresponding to the absence of a fluid induced electrical short between the conductors or a leak condition corresponding to the presence of an electrical short between the conductors and relating the resistance corresponding to leak condition to a

location along the at least one of the pair of conductors (Abstract, Columns 1-4, Figures 1-18).

Regarding claim 14, Takahashi et al. disclose where a pair of electrical conductors in proximity to a vessel at least one of the electrical conductors being elongate and having a sheath of an electrically insulative and porous material (Abstract, Columns 1-6, Figures 1-4).

Regarding claim 15, Takahashi et al. disclose circuitry that determines a resistance between the one pair of electrical conductors and the other conductor includes measuring a resistance in ohms (Figures 2-4, 14, 18, 19).

Regarding claim 16, Takahashi et al. disclose where providing a predetermined current to the conductors and measuring a voltage through the conductors (Figures 2-4, 18, 19).

Regarding claim 17, Takahashi et al. disclose where providing a predetermined voltage to the conductors and measuring a predetermined current to the conductors (Figures 2-4, 18, 19).

Regarding claim 18, Takahashi et al. disclose a pair of electrical conductors in proximity to a vessel at least one of the electrical conductors being elongate having a sheath of an electrically insulative and porous material; and determining a resistance between one of the pair of electrical conductors and other conductor; providing a voltage to the electrical conductors; measuring the other one of a voltage and current not

provided to the pair of electrical conductors and determining from the voltage and current the measured voltage and current not provided in the existence and the location of a fluid induced electrical short (Abstract, Columns 1-6, Figures 1-18).

Regarding claim 19, Takahashi et al. disclose determining the resistance and location of a fluid induced electrical short (Abstract, Columns 1-6, Figures 1-4).

Regarding claim 20, Takahashi et al. disclose where the resistance is measured in ohms (Figures 2-4,14,18,19).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. in view of Prince et al.

Regarding claims 2 and 4, Takahashi et al. does not disclose a drip tray. However, Prince et al. disclose in "Liquid level sensor" which describes a drip tray in conjunction with electrically conductive material (Pages 1-8). Therefore, it would have been obvious to one of ordinary

skill in the art at the time of invention to modify Takahashi et al. to include a drip tray as taught by Prince et al. By adding this feature the user would be aware of a leak on a smaller vessel since the liquid would be contained within a tray and not leaking on a floor.

7. Claims 10-12 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. in view of Gott.

Regarding claim 10, Takahashi et al. does not disclose where one insulated conductor comprise a chemically treated insulator that changes color when in contact with a liquid making the leak visible. However, Gott discloses one insulated conductor having a chemically treated insulator that changes color when in contact with a liquid making the leak visible (Column 2, lines 32-34). Therefore, to modify Takahashi et al. to include one insulated conductor having a chemically treated insulator that changes color when in contact with a liquid making the leak visible would have been obvious to one of ordinary skill in the art at the time of invention as taught by Gott. By adding this feature the user would be able to see if there was a leak because the color change would making it possible to see from a distance.

Regarding claim 11, Takahashi et al. does not disclose where the insulator is treated with copper sulfate. However, Gott discloses one insulated conductor having a chemically treated insulator that changes color when in contact with a liquid making the leak visible (Column 2, lines

32-34). To make the chemical copper sulfate is considered a design choice and well within the purview of the skilled artisan since Gott discloses chemically treating the conductor for a color change.

Regarding claim 12, Takahashi et al. disclose where one conductor is made of nichrome (Columns 13-14).

Regarding claim 21, Takahashi et al. does not disclose determining the existence and location of a fluid induced electrical short between the conductors includes measuring a resistance is done using a computer. However, Gott does disclose a system computer (17), which is connected to the detection circuit (11) that determines the existence and location of a fluid induced electrical short between the conductors. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Takahashi et al. to determine the existence and location of a fluid induced electrical short between the conductors includes measuring a resistance is done using a computer as taught by Gott since this would make the detection and location extremely precise.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to André K. Jackson whose telephone number is (703) 305-1522. The examiner can normally be reached on Mon.-Thurs. 7AM-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (703) 305-4705. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

A.J.

January 14, 2004

DETAILED ACTION

Response to Arguments

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Regarding claim 3, Takahashi et al. disclose a pair of electrical conductors has a second insulated conductor characterized by an electrically insulated, porous sheath and being parallel in adjacency (Figures 1,2,8,9).

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Regarding claim 7, Takahashi et al. disclose circuitry that measures ohms (Figures 2-4,14,18,19).

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A.J.



January 14, 2004



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